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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18802.331-2024

**Components for low-voltage surge protection - Part 331:
Performance requirements and test methods for metal oxide
varistors (MOV)**

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 331 of GB/T 18802. GB/T 18802 has been published in the following parts.

--- Low voltage surge protective devices (SPD) Part 11: Performance requirements and test methods for surge protective devices for low voltage power supply systems;

--- Low voltage surge protective devices (SPD) Part 12: Guidelines for the selection and use of surge protective devices for low voltage distribution systems;

--- Low voltage surge protective devices Part 21: Surge protective devices (SPD) for telecommunication and signalling networks Performance requirements and test methods;

--- Low voltage surge protective devices Part 22: Guidelines for the selection and use of surge protective devices for telecommunication and signalling networks;

--- Low voltage surge protective devices Part 31: Performance requirements and test methods for surge protective devices for photovoltaic systems;

--- Low voltage surge protective devices Part 32: Guidelines for the selection and use of surge protective devices for photovoltaic systems;

--- Low voltage surge protective device components Part 311: Performance requirements and test circuits for gas discharge tubes (GDT);

--- Low voltage surge protective device components Part 312: Guidelines for the selection and use of gas discharge tubes (GDTs);

--- Low voltage surge protective device components Part 321: Avalanche breakdown diode (ABD) specification;

--- Low voltage surge protective device components Part 331: Performance requirements and test methods for metal oxide varistors (MOVs);

--- Low voltage surge protective device components Part 341: Surge suppression thyristor (TSS) specification;

--- Low voltage surge protective device components Part 351: Performance requirements and specifications for surge isolation transformers (SIT) for telecommunication and signalling networks experiment method;

--- Low voltage surge protective device components Part 352: Selection and use of surge isolation transformers (SIT) for telecommunication and signalling networks Guidelines.

This document replaces GB/T 18802.331-2007 "Low-voltage surge protector components Part 331: Metal oxide varistors Compared with GB/T 18802.331-2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Added the definition of metal oxide varistor (see 3.1.1);

--- Added the definition, abbreviations, performance requirements and test methods of thermal protection varistors (see 3.1.1.2, 3.3, 5.3.12, 6.2.4.12);

--- Added the definition of failure (see 3.1.1.3);

--- Added the definition, abbreviations, performance requirements and test methods of mean time between failures (see 3.1.2.8, 3.3, 5.3.10, 6.2.4.10);

--- Added the definition, performance requirements and test methods of TOV tolerance time (see 3.1.2.9, 5.3.11, 6.2.4.11);

--- Increased the voltage rating of the varistor (see Table 1);

--- Added the test current values for different varistor limiting voltages (see Table 2);

--- Added test methods and procedures for varistors (see 6.2.1);

--- Changed the varistor voltage test method (see 6.2.4.1, 8.4.3 of the 2007 edition);

--- Added the test flow chart of nominal discharge current (see Figure 8);

--- Added the limited current test of thermal protection varistors under temporary overvoltage (see 6.2.4.12).

This document is modified to adopt IEC 61643-331:2020 "Low-voltage surge protective device components Part 331: Metal oxide varistors Performance Requirements and Test Methods.

Compared with IEC 61643-331:2020, this document has more structural adjustments. The structural number comparison table between the two documents is as follows.

See Appendix A.

This document has many technical differences compared to IEC 61643-331:2020.